

BIPES RUMORS IN THE WESTERN UNITED STATES

CHAD ARMENT

It's a fact that reptiles are often mistakenly reported well outside their range. Most species aren't readily identifiable by the general public, while other species are so "well-known" that every reptile they see must be that animal. (I once examined a freezer bag full of dead "water moccasins" that a southern Ohio farmer caught in his creek—not surprisingly identifying them as northern water snakes.) But some stories are less run-of-the-mill. Who would mistake something for an amphisbaenid? Maybe more people than we'd imagine.

Everyone has heard of snakes, lizards, and turtles, but few outside of reptile enthusiasts have heard of amphisbaenians (sometimes called worm lizards). These are fossorial reptiles, most being rather small, with *Amphisbaena alba* reaching a couple feet in length. All are limbless except for the Mexican genus *Bipes*, which retains two small forelimbs. Only one family, the Rhineuridae, is known in the United States, formerly having a large distribution throughout the North American continent, but today only found in Florida—*Rhineura floridana* is the only living species.

THE STORIES

The first story suggesting that there could be another amphisbaenid north of Mexico comes from Major S. H. Long's expedition to the Rockies, when naturalist Edwin James recorded the capture of some unusual creatures on June 27, 1820 (Campbell 1980), presumably also examined by accompanying zoologist Thomas Say.

Campbell noted the likelihood of Say examining the specimen, pointing out that he was an able taxonomist and original describer of a number of well-known species and subspecies of American reptiles.

James wrote: “We observed, in repeated instances, several individuals of a singular genus of reptiles (*chiotes*, Cuv.) which in form resemble short serpents, but are more closely allied to the lizards, by being furnished with two feet. They were so active, that it was not without some difficulty that we succeeded in obtaining a specimen. Of this (as was our uniform custom when any apparently new animal was presented) we immediately drew out a description. But as the specimen was unfortunately lost, and the description formed part of the zoological notes and observations which were carried off by our deserters, we are reduced to the necessity of merely indicating the probability of the existence of the *chiotes lumbricoides* of naturalists, within the territory of the United States.” Taylor (1938) notes that these were found in the region between what is now Ogallala, Nebraska, and Julesburg, Colorado, “possibly near the present Nebraska-Colorado line.”

Chiotes is an old name now synonymized into *Bipes*. *Bipes* consists of three recognized species endemic to Mexico: “*Bipes canaliculatus* occurs in the Balsas Depression of Guerrero and Michoacán; *B. tridactylus* in a small geographic area of coastal



Bipes biporus © Marlin Harms

Guerrero; and *B. biporus* in the Baja California peninsula” (Papenfuss 1982). So, what Edwin James reported was a fairly distinctive member of the amphisbaenids, showing two limbs, rather than one of the more common limbless variety (which are the only ones known to have ever inhabited North America).

We'll look at objections to this report, but first I'd like to emphasize that this is not the only account of a *Bipes*-like creature in western North America. Others have been published in the herpetological literature. Taylor (1938), for example, recorded his search over several years for a *Bipes*-like animal that he believed inhabited southeastern Arizona. His details are fascinating (referred to as “a stimulating account” by Smith (1946)):

“During my collecting in southeastern Arizona during the summers of 1928-1930, and again in 1934, I have searched in vain for a species of *Bipes* which I believe inhabits southeastern Arizona. My first reason for this belief was based upon the statement of a placer-gold miner, in Ash Cañon in the Huachuca Mountains. He said that he had occasionally dug from the sand and gravel along the small creek in the cañon, ‘a small snake 10-14 inches long with two small legs near its head. They were purple or brown in color.’

“In another nearby cañon, I visited Dr. Biedermann, then nearly ninety years of age, who had lived more than thirty years in the Huachucas and had made extensive collections of Lepidoptera for the museums of the world. He told me that there was ‘a rare chirotos living in the mountains,’ and that he believed he had one preserved. However, on examination of his small collection of reptiles the specimen could not be found.

“While collecting on Mount Lemon, in the Santa Catalina Range, I stopped at a small hotel near the summit. Mrs. Westbrook, the owner, warranted that I had found no snake like one she had found and kept for a pet. ‘It had a pair of legs coming out where its ears should be.’ It was found in the garden in the evening during a rainstorm. She had kept it for three months and it had escaped. Others vouched for the story, having seen the captive specimen.

“The forest guard at the outlook station on Mount Lemon, told me that he had found in the Huachucas a specimen of a snake with

‘two legs on its neck. It was lavender and white below. The legs were so short that it didn’t use them to walk on.’ Although a collector of snake skins as a hobby, he had not preserved the skin of the specimen, because it was too small.

“Mr. Doty, of the Forest Service, whom I met on Mt. Lemon in 1934, told me that some months previously, his workers had killed three two-legged snakes while removing piles of rocks in order to drill post holes for telephone poles. He took me to the exact place. A day was spent in the vicinity but none was found. It was extremely dry at this time. It had been raining when they were killed.

“I do not believe that all of these reports have been fabricated, and all seem to point to the same animal. It seems almost beyond question that a species of *Bipes* occurs in southeastern Arizona, at least in the Huachucas and the Santa Catalina Mountains, a real prize for some collector who will put forth the necessary effort to discover it.”

Dundee (1980) recorded an additional alleged sighting while searching for reptiles in Brady County, Nebraska, in 1951. He was on a ranch in the sandhills along the unpaved section of Route 83. Dundee quotes from his field notes the description given to him by the rancher and his children: “There is in this area a lizard with only two legs, these near the head. It is said to crawl like a snake and reaches a length of a foot or so. Grayish or silvery grayish in color. Found along fence rows or fence posts.” The rancher’s teenage son was able to describe other reptiles in the area accurately enough that Dundee was confident in this description. He was told that the “two-legged lizard” was most often found when they were excavating for fence posts or digging up rotten fence posts.

Smith and Holland (1981) described two sightings that were described to Dr. T. Paul Maslin, a Colorado herpetologist. The first was from a “well-educated janitor at Colorado State University in Ft. Collins, where Maslin taught at the time.” The man described a *Bipes* that he had found on his farm southeast of Ft. Collins some years prior. Maslin showed the man a *Eumeces* skink, which the man dismissed quickly, noting that the *Bipes* was very different. Later, a female graduate student noted in “equally convincing

detail” her encounter with a *Bipes* found under a rock along a “hog-back” a few miles west of Loveland.

Wright and Mason (1981) noted the story from an early pioneer of central California, Jose Francisco Palomares, collected in 1877 which describes an “ajolote” which tried to enter the rectum of a sleeping man. The small snakelike animal had two small hands with “short, little claws, steel-like and as sharp as needles.” The authors noted that this behavior is also attributed to *Bipes* in folk stories in Baja California, and that while the veracity of some elements of the story are certainly questionable, it is possible that such a creature was actually found and killed.

Stebbins (1985) reported that, “In the 1870s, Kenneth Swartz found a ‘worm lizard’ in Paradise Valley near Phoenix. It was about 6 in. (15 cm) long; a bit thicker than a pencil; had pearly, slightly, translucent scales; legs about 3/16 in. (5 mm) long and 1/16 in. (2 mm) wide, tipped with tiny claws; and no trace of hind limbs. It crawled in clumsy, snakelike fashion and seemed to use its nose in digging when it was returned to its burrow. Termite tubes were present in the mud around the burrows.” (Stebbins, as will be noted, apparently changed his mind in later years about the likelihood of this mystery animal.)

In 2005, a Robert Villa posted on the Arizona Herpetological Association webforum in a *Bipes* debate thread that his grandmother had described to him a *Bipes*-like animal, seen first in the Santa Catalinas, and then near Sedona. In the same forum thread, Ted Pappenfuss noted that Stebbins had once collected a report from a forest ranger in the Ruby area, but provided no further detail. What inspired this discussion and debate on the AHA website was a newspaper column (Thompson 2005) in which someone in Camp Verde wrote in asking for help identifying a “fast-moving lizard that seems to have no legs,” “about 8 to 10 inches long,” that wiggled like a snake. The columnist first suggested it was an alligator lizard, but then mistakenly stated that legless lizards were present in Arizona. If there’s anything that inspires heated indignation in a herp enthusiast, it’s a newspaper columnist who gets his reptile facts wrong.

Beyond the scope of this article, being outside the U.S., the presence of *Bipes* in the Mexican state of Chiapas has been suggested, but not confirmed (Pappenfuss 1982).

THE OBJECTIONS

For as many stories of *Bipes*-like animals in western states, there are just as many objections from both herpetologists and herp enthusiasts. Some, like Taylor (1938), critique earlier accounts (as Taylor wondered whether Edwin James' report was fictitious) while offering their own material as credible. Others simply find the idea of a western amphisbaenid untenable.

The most common complaint is that if *Bipes* existed in western North America, some herp collector somewhere would have acquired a specimen by now (Hammerson 1999; AHA 2005). Certainly, the lack of specimens is problematic. But, just as odd, is the lack of misidentified specimens. We have circumstantial evidence of specimens being collected and lost (as with the Edwin James account), or kept as a pet (Taylor 1938) only to escape. But just as with other misidentified animals, we should certainly have accounts of collected specimens which turned out to be something more ordinary. So far, I haven't seen any such accounts in print, just speculation that misidentifications are occurring.

Gans and Pappenfuss (1980) presented several objections to Edwin James' 1820 observation. First, they noted that James stated, "they were so active, that it was not without some difficulty that we succeeded in obtaining a specimen." Their own observations in collecting and handling a number of amphisbaenids were that these animals are not difficult to catch once "disclosed," with *Bipes* being very slow-moving. They noted other species with escape behavior are not hard to acquire. In their field studies, collecting over 3000 *Bipes*, only three were not caught underground. Those three were moving slowly on the surface at night. Thus, they conclude, "Whatever the animal observed by James, it is most unlikely to have been an amphisbaenian." This is their strongest argument (and one that is reiterated by Smith and Holland (1981)), but I do wonder if there isn't some "reading into" the original report by

James as to what he meant. We aren't given details, for example, on the circumstances of the expedition sightings (though perhaps the original 1823 text provides them)—rain, for example, is known to bring Florida worm lizards to the surface, where they would otherwise remain hidden. I don't have a lot of direct experience with amphisbaenids, but earlier in 2014 I had opportunity to briefly handle a Florida worm lizard at a reptile expo. I was very surprised when first attempting to dig the small creature out from the soil in a small container, that it truly didn't want to emerge and somehow managed to actively resist my efforts despite not having anything to grasp (there being only soil in the box). Less persuasive is the next argument Gans and Pappenfuss made, that the name *Chirotes* in 1820 was in a state of flux, and may have confused James or Say. James specifically noted that the animal was “furnished with two feet.” There are no other two-footed reptiles in North America to confuse the issue. Finally, Gans and Pappenfuss noted: “As there is no other direct observation, and all ‘reports’ of *Bipes* from the central U.S. followed rather than preceded local inquiries for such animals, it seems best to delete such ‘records’ from future field guides.” This, I'm afraid, just doesn't work, as we have several accounts on record which were given prior to inquiry. (And frankly, I'm not sure that that truly counts as problematic anyway. Ethnozoological inquiries are a valid methodology for fieldwork and shouldn't be dismissed so cavalierly.)

There have been several objectors to the idea of a North American *Bipes* on the grounds of climate tolerance. Amphisbaenids as a lot are warm climate animals. Colorado and Nebraska see very cold weather during the winter, and even the mountains of southern Arizona (where the sightings occur) see snow. So, there would appear to be a climatic barrier that North American amphisbaenids must hurdle (AHA 2005; Smith and Holland 1981). But, this is the sort of objection that falls away once a new species is discovered. At most, we can say it's unlikely, but not impossible. Similarly, the objection that there are no nearby populations of known *Bipes* (the closest being Baja California) also can't rule out the possibility of disjunct populations with absolute certainty (Hammerson 1999).

Assuming that there could have been an ongoing series of mistaken identities, what would have been seen that could cause the error? Two different lizards have been suggested as possible culprits. Smith and Holland (1981) suggested that the many-lined skink *Eumeces multivirgatus* might have been seen by the Long Expedition party, and as the account of the *Bipes*-like animal was written from memory (as the notes and specimen were lost), perhaps some confusion resulted. The main problem with this idea is that skinks in general are well known North American lizards, and (as Smith and Holland admit) it is highly unlikely that knowledgeable biologists like James and Say (the latter of whom Dundee (1996) referred to as “meticulous in his observations”) would make such a gross misstep in identification, even working from memory.

Pappenfuss had discussed outlier *Bipes* reports with Dr. Robert C. Stebbins (best known for his field guide to western herpetofauna), noting (Pappenfuss 1982) Stebbins’ theory, based on his own observation, that reports might be generated by people seeing an alligator lizard, *Gerrhonotus*, “crawling slowly on the ground



A female five-lined skink (*Eumeces*) sunning itself with legs tucked up close to its body. © Chad Arment

using only its forelimbs while its hind limbs are folded against the body.” This might be a possibility with cases where the eyewitness only saw the animal for a short period on the surface. It doesn’t seem likely, however, for those reports where the animals were dug up from out of the ground (skinks are very quick and unlikely to be captured that way), nor for cases where the animal was in hand.

I have seen a suggestion that Taylor’s Arizona tales might have been spun wholesale simply for the alleged eyewitness’ amusement. This doesn’t seem a likely scenario, however, as there was nothing particularly out of the ordinary about the sightings, beyond being in a new locality. This is not to say that tall tales can’t occur. Merritt S. Keasey III, a curator at the Arizona-Sonora Desert Museum, offered this brief tale (Keasey 1973): “Museum people were quite excited once when a gentleman called in to say that he had captured a rare, two-legged lizard for them. These strange creatures are known to occur only in Baja California, although there have been reports of them from the mountains of southern Arizona. Here would be the first living proof!

“The museum director returned the call personally and asked about the strange lizard. The person insisted that, yes, he had it, but that it had died and had been preserved in a bottle of whiskey. The director was disappointed, for he had wanted it alive, but at least the record still would be valid if the preserved beast could be obtained.

“He made an appointment to go to the mountain cabin to pick it up the next day.

“There are still no records of the two-legged lizard in Arizona, for when he got there the contents of the bottle had been drained—orally, it would seem—and the lizard was no where to be found.”

BIPES AS A CRYPTID

As every cryptozoology enthusiast should know, a cryptid is simply an ethnoknown animal, as yet unconfirmed to exist, whether a new or “lost” species. If *Bipes* exists in the U.S., it is almost certain to be a distinct species, making it a legitimate cryptid. As a cryptid, it is an ethnozoological target for species discovery

methodologies, but this has no bearing on whether or not it actually exists. These stories may simply be an example of scientific folklore, i.e., speculation by qualified scientists.

For a cryptozoological researcher, it is a little frustrating to watch scientists without any cryptozoological background struggle with decades of fruitless searching. For example, Smith and Holland (1981) inform us that for several decades naturalists in Colorado, including graduate students at the University of Colorado, have sought the “Chirotes” of the Long Expedition. “Considerable publicity resulted, at intervals, the most notable being an article that appeared in one of the local papers. All these efforts yielded only more anecdotes and speculation, hence were not recorded.” Obviously, they had no concept of the usefulness of anecdotal evidence, or the importance of documenting such sightings for future research.

Instead we see argument that there is “no evidence” (Gans and Pappenfuss 1980), which is patently untrue. There is no *confirmative* evidence, no proof of existence. But there is *circumstantial* evidence, which shouldn’t be used to engender fallacious conclusions, but can be used in a discovery methodology such as cryptozoology to finally locate confirmative evidence, if such exists.

Dundee (1980) pointed out the error of thinking we know everything: “The discovery of fossorial creatures can crush our egos when we think that the herpetofauna of a given area is well known—e.g. the finding of the remarkable salamander, *Phaeognathus hubrichti*, in Alabama in 1960!”

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